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Measuring Organizational Learning: A Preliminary Progress Report

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BAE, Integrated Security Solutions (ISS)

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14. ABSTRACT *(Maximum 200 words)*:

The goal of this research effort was to develop observer-based measures of organization learning and then apply the measures to assess how a Stryker Brigade Combat Team (SBCT) cognitively prepares for combat. The research team adopted a measurement approach based on what is called the Tactical Problem Solving Process (TPSP), rather than the Military Decision Making Process (MDMP), as TPSP better reflects how brigades currently conduct the planning process during exercises. During Phase 1, a set of preliminary measures were developed to assess: Leader Initiative, Command Approach, and Understanding Command Intent. At the contractor's request, the Phase II assessment was not conducted. This report, therefore, documents the preliminary but potentially useful progress made on measuring organization learning.

15. SUBJECT TERMS
measurement, learning, organization learning, leader initiative, command approach, command intent

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CONTENTS

MEASURING ORGANIZATIONAL LEARNING: A PRELIMINARY PROGRESS REPORT

Introduction

Overview

The cognitive domain of training for war is an emerging aspect of military operations that is creating new opportunities for the United States military. However, it is often recognized as being complex and intuitive. If the cognitive domain of training for war is combined with good decision-making and timely reasoning, it has the potential to guide a fundamental shift in the way the United States Army measures the amount of learning achieved during military training. A successful development and application of accurate cognitive assessment tools could greatly enhance the Army's ability to prepare units for combat by providing commanders with a set of metrics to better assess the true effectiveness of their training programs. Organizational learning is more than the sum of a unit's training tasks and how they are accomplished. It is also the acquired capacity for the unit's decision makers to collectively analyze a situation to recognize which course of action should be pursued, and to determine their effectiveness in evaluating that course of action by processing all aspects prior to a final decision. The blurred distinction between training and performance support, brought on by current and future combat systems, demands that we now look at organizational learning.

In the complex, uncertain and time sensitive conditions often encountered at the tactical level of war, young commanders and leaders must rely on a relatively short experience base when deciding on courses of action to accomplish their mission. Theoretically, the more experience they have, the broader the base of viable options they'll have to choose from. Gary Klein attributes this phenomenon to the power of Intuition. "*Intuition depends on the use of experience to recognize key patterns that indicate the dynamics of the situation*" (Klein, 1999, p.31). Klein further advocates that "*…the part of intuition that involves pattern matching and recognition of familiar and typical cases can be trained. If you want people to size up situations quickly and accurately, you need to expand their experience base*" (Klein, p. 42). Conceptually, the ability to make and execute decisions better and faster will deliver higher payoffs at the tactical level of war.

The Army's Stryker University Center of Excellence, located at Fort Lewis, Washington, endorses this concept and has incorporated it into its continuous learning methodology for training Stryker Brigade Combat Teams (SBCT). Two of the University's desired goals are to (1) increase the experience base of the SBCT leaders, and (2) produce units that increase the use of intuitive decision making (Army Continuous Learning, 2006). This commitment to experienced based learning is further reflected in the Stryker University's mission statement to:

> Create a collaborative, distributive, continuous learning methodology that is operationally based, can serve as a prototype for all modular brigades, rapidly increase the Soldier and leader experience base and enhance unit learning and performance throughout the Army Force Generation process. (Army Continuous Learning, slide 5)

Stryker University's training methodologies are designed to sustain a consistent upward trend of leader development and unit proficiency throughout the operational lifecycle of the SBCT.

A pilot project employing cognitive assessment tools and metrics, under the leadership of the Army's Stryker Center of Excellence, could develop an approach to measure and assess how well a SBCT prepares for combat. This investigation could lead to new insights into the development of Army training strategies and methodologies, and offer more effective alternatives for future combat systems including Brigade Combat Team training.

Cognitive Measures Development

Concept of operations (Mission statement)

BAE, Integrated Security Systems (ISS) was contracted to develop and conduct a pilot project that would draw upon recent cognitive and behavioral research conducted by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI). To accomplish this, the mission was to develop and apply a set of cognitive assessment metrics designed to measure the rate of learning achieved by a Stryker Brigade Combat Team (SBCT) during training in preparation for combat operations.

Phase 1: Cognitive measures development

The major research issues were:

- What surveys, questionnaires, or other similar data sourcing styles are available to conduct a proper assessment on the SBCT?
- When are the best milestones that will allow the Investigator team to evaluate the SBCT?
- Which decision making process format best allows the Investigator team to evaluate the Brigade as it prepares for war?
- What attributes best describes a military unit's characteristic to include definitions of such features?

Conduct front-end analysis

Research was conducted from previous intuitive base techniques and adaptive performance research efforts such as:

- Think like a commander (TLAC)
    - TLAC is an ARI research report 1868: Accelerated the development of adaptive performance.
- Enhanced team adaptability in dynamic settings
    - ARI research note 2004-01: Determine metrics used to measure learning or degree of performance.
- Leadership, team processes and team adaptation
    - ARI research note 2004-01: Determine metrics used to measure learning or degree of performance.

- Team competencies
    - Determine any metrics used to measure learning or degree of performance.
- Team identity
    - Determine any metrics used to measure learning or degree of performance.
- Team cognition
    - Determine any metrics used to measure learning or degree of performance.
- Leader experience
    - Determine any metrics used to measure learning or degree of performance.
- Leader initiative
    - Determine any metrics used to measure learning or degree of performance.
- Interpersonal performance model
    - Examine the 16 critical interpersonal dimensions used in the model and the behavioral summary scales (BSS) that are developed.
    - Determine how this assessment might be applied to a SBCT or other US Army BCT.
- Data frame model of sensemaking
    - ARI special report 62: Examine the 16 critical interpersonal dimensions used within the model to include the cognitive task data collection methods.
    - Determine how this assessment might be applied to a SBCT or other US Army BCT.
- Adaptive thinking training model
    - ARI research report 1824: Examine the 8 expert tactical thinking behaviors and the vignette based situational judgment tests developed to test the model.
    - Determine how this assessment might be applied to a SBCT or other US Army BCT.
- Developing adaptive proficiency in Special Forces officers
    - ARI research report 1831: Examine the 8 dimensions of adaptability that describe different kinds of adaptive behavior that may be displayed.
    - Determine which personality traits and knowledge, skills, and abilities (KSAs) might best be applied to a SBCT or other US Army BCT.

Develop organizational learning assessment tools

There are several goals the Investigator team had toward developing organizational learning assessment tools. First, the teams planned to leverage historical intuitive based products and explore new ways to measure cognitive learning. This would be accomplished by reviewing interpersonal performance models, the data/frame model of sensemaking, the adaptive thinking training method, and the human functional analysis approach. Additionally, the team planned to develop real-world operational definitions, explanations and sample outputs for each measurement tool developed for the assessment matrix. These operational definitions would enable future researchers to use any products developed to be easily administered and understood. Finally, the team planned to develop and select a set of tools that are as adaptive as a SBCT and are relevant to their operating environment.

Following this initial work, the Research Team focused on developing three metrics:

1. Leader Initiative
2. Understanding Command Intent
3. Command Approach

Following our research and consultations with ARI, Leader Initiative and Understanding Command Intent were developed as Behavior Anchored Ratings Scales, or BARS. We relied heavily on the TBARS rating scale developed from the Think Like a Commander series previously done by ARI.

The Command Approach metric borrowed some aspects of a BARS, but instead of focusing on TLAC work, used the Military Decision Making Process (MDMP) as a starting point.

Questionnaires and surveys

Early on in our development of metrics, ARI requested that any data collection be achieved passively. This complicated our development efforts but ultimately solidified our belief that the BARS approach would yield the best results. Expert input is critical in the development of metrics as these provide not just a framework for rating, but actually are the rating, with the rater simply picking the appropriate level.

It is our belief that further work needs to be done on these metrics. They are reasonably complete, but only significant testing will reveal whether they are appropriate for real world use.

Some questionnaires and surveys were discussed during the early parts of our efforts, but were quickly scrapped due to guidance from ARI. They are not included in this report as we do not feel that they have bearing on this product.

Understanding the ARFORGEN model

It is important to understand the Army Force Generation (ARFORGEN) lifecycle and define the high payoff times (milestones) to conduct this ARI research. The ARFORGEN lifecycle model, which provides a stabilized and equipped force for a doctrinal lifespan of 3 years for Active Component,is displayed in Figure 1.

The Army Force Generation (ARFORGEN) model is a structured progression of events to increase unit readiness over time, resulting in recurring periods of availability of trained, ready, and cohesive units prepared for operational deployment in support of regional combatant commander requirements. To generate combat power on a sustained cyclic basis more effectively and efficientlyunits proceed through the Reset / Retrain, Ready, and Available / Deployable phases and enter the force pools to meet operational requirements with increased predictability. The phases are described below:

- Reset and Retrain phase: During this phase units generally redeploy from operations, receive and stabilize personnel, reset equipment, and conduct individual and collective training. Unit collective training is focused on core Mission Essential Task List (METL) tasks, such as offensive and defensive operations. The Reset and Retrain phase culminates in a brigade-level collective training event, for example NTC or JRTC exercises.
- Ready phase: During this phase the units continue mission-specific collective training and are eligible for sourcing, if necessary, to meet joint requirements. Their collective training is designed to focus on its directed METL, such as stability operations.
- Available phase: During this phase the unit is in their planned deployment window and are fully trained, equipped, and resourced to meet operational requirements. In this way, the ARFORGEN lifecycle enables units to be fully trained to conduct full-spectrum operations.

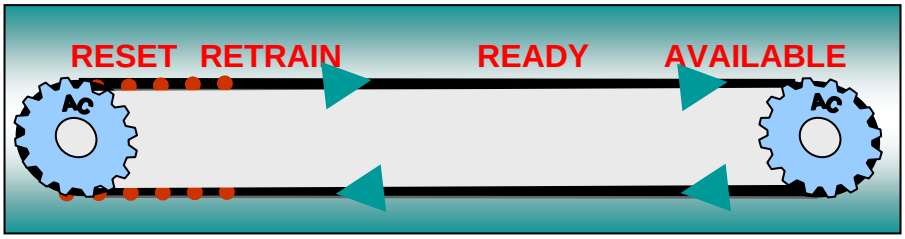


Figure 1: ARFORGEN lifecycle model

The reality for some Active Component (AC) units is the lifecycle may become condensed as seen in Figure 2 with an 18 to 24 months turn around, sometimes less.

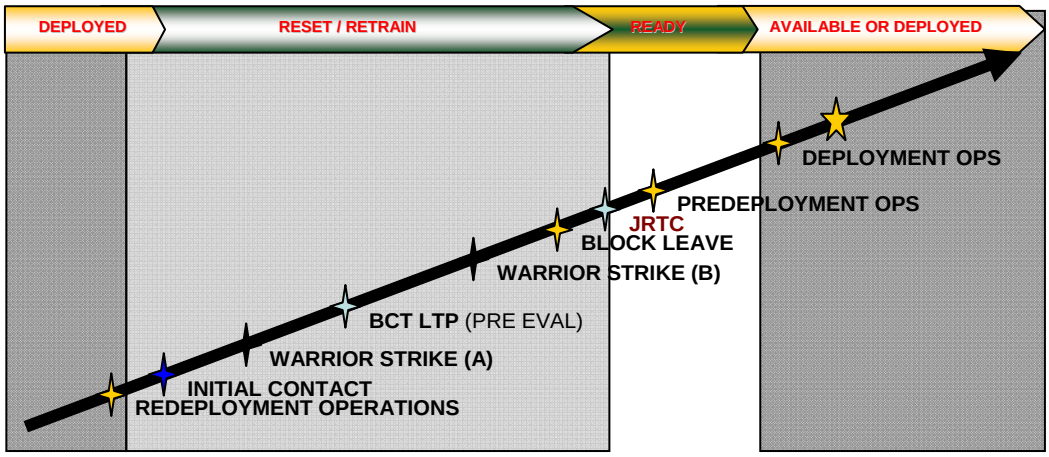


Figure 2: ARFORGEN lifecycle model with milestones

The understanding of the ARFORGEN cycle is paramount to understanding when and where a study of this magnitude can best be completed. The ability to mark and contact a unit to conduct a cognitive study is most beneficial during the earliest time of the reset phase and not at the later end of the retrain phase.

Military Decision Making Process (MDMP)

The initial Investigators' tool was the observer assessment worksheet. This worksheet followed the Military Decision Making Process (MDMP) to include the seven decision making steps, as seen in Figure 3.

In Appendix C, the initial Observer Assessment form provides an overall observer view on rating per attribute according to how well the SBCT develop, apply, and employ information on an analytical versus intuitive scale. A graphic Likert rating scale will be used by the observer to assess each MDMP step (not each sub task of the step). The sub tasks are listed so the observer may track the MDMP process. Following given examples on the Guidance Sheet,"1" will be considered analytical and "5" will be considered intuitive. (Appendices D-E)

The Observer Survey section of the Observer Assessment form will allow the Investigator to survey the SBCT and provide a review reference to the SBCT exploiting the Army Battle Command Systems (ABCS) (system of systems). A graphic rating scale will be used by the observer to assess how well the SBCT access, use and employ the information for each MDMP step from the ABCS.

Figure 3: Military Decision Making Process (MDMP)

Observer tool attributes

The Investigator team required a set of attributes that were flexible and military friendly that would mirror a Brigade preparing for combat operations. The Investigator team worked through multiple "civilian" attributes, however, they did not fit the Brigade and military adaptability. Initially, the team used the characteristics of intuitive approaches verses analytical approaches in decision-making from the Pat Crosskerry studies. Below is a list if initially used characteristics to measure a SBCT cognitive learning during training.

- Cognitive style
- Cognitive awareness
- Automaticity rate
- Reliability
- Errors
- Effort
- Emotional valence

The above characteristics focus on good problem solving, sound judgment and effectiveness for a clinical decision-making environment. However, they do not meet the metrics needed to describe the cognitive continuum of decision-making for a military unit. The Investigator team refined the attributes listed below (Appendices D-E) to better match the appropriate cognitive activity to the particular tasks. The Investigator team referred to the "*Developing Adaptive Proficiency in Special Forces Officers*" (Research Report 1831) that was developed by ARI for the Special Forces (SF) Officers course. The concept and approach from this research report describes an 8 dimensions of adaptability. We propose to modify and use 7 of the 8 dimensions listed below. (Dimension 8, demonstrate physical oriented adaptability, was not used.)

- Handle crisis situations
- Handle work stress
- Solve problems creatively
- Deal with unpredictable or changing situations
- Adapt tasks, technologies and procedures
- Demonstrate interpersonal adaptability
- Demonstrate cultural adaptability

Each assessment attribute, on Appendices D-E Command approach guidance sheets, are defined in further detail from analytical to intuitive. By using these definitions as guidance, the observer will select the appropriate level the SBCT is conducting their organizational learning and processing rate during a Brigade level training scenario. A graphic rating scale will be used by the observer to assess each MDMP step (not each sub task of the step). The sub tasks are listed so the observer may track the process (see Appendix C). Following given examples on the Guidance Sheet, "1" will be considered analytical and "5" will be considered intuitive.

Validate organizational learning assessment team

The Investigator team assembled a subject matter expert (SME) advisory group to validate the assessment worksheets, measurement metrics, and surveys. The advisory group consisted of a mix of behavioral scientists and senior military officials with a background in training and military operations, to review and validate the tools developed.

Validate learning assessment tools findings

Although the initial Special Forces Officers study relating to the dimension of adaptability emerged as a beneficial continuation to evaluate the Brigade, the attributes did not relate well to the study parameters. However, the Investigator team continued to refer to the "*Developing Adaptive Proficiency in Special Forces Officers*" (Research Report 1831) that was developed by ARI for the Special Forces (SF) Officers course. During Warrior Strike (B), the Investigator team adapted the SF personality traits and knowledge, skills, abilities (KSAs) that better align with the Brigade staff's tactical operations. The concept and approach from the Special Forces research report describes predicating adaptability and components that can contribute to individual levels of adaptability. Below are several personality traits and KSAs that can add to adaptability.

- Personality traits:
    - General staff efficiency – Confidence in staff's ability to succeed.
    - Staff adaptability – The ability to recover quickly from change, hardship, or misfortune.
    - Staff openness – Staff's curiosity, broad-mindedness and receptive to new events.
- KSAs:
    - General cognitive ability – Staff's general intelligence capability.
    - Problem solving / decision making skills – Developing appropriate solutions.
    - Staff awareness – Understanding how staff departments relate to each other.
    - Adapt tasks, techniques and procedures (TTP) – Understanding when to anticipate changes in work demands.

By using these updated definitions as guidance, (Appendices J-K) the observer team was able to follow and monitor the attributes while the Infantry Brigade Combat Team (IBCT) was conducting their organizational learning and processing rate during a Brigade level training scenario. A graphic rating scale will be used by the observer to assess each MDMP step (not each sub task of the step). The general sub tasks are listed so the observer may track the process. Following given examples on the Guidance Sheet - "1" will be considered analytical and "5" will be considered intuitive.

Data Collection

Phase 2: Data collection

This task was to examine the ARFORGEN lifecycle for an active duty SBCT, in close coordination with the Stryker Warfighter Forum (SWfF), and develop an assessment plan that will measure the cognitive learning of the designated SBCT at various evaluation points in their training lifecycle.

Develop an assessment plan to measure organizational learning of a SBCT

MDMP Observer Assessment (Appendix C): This study initially matched well with the Brigade Combat Team (BCT) LTP and at JRTC or NTC (Figure 2). It has been proven that during other exercises this process is not beneficial because during tactical Brigade operations a standard MDMP format is not closely followed. After the early MDMP cycle is completed by the Brigades' initial planning phase, a more tactical decision-making methodology should be observed, for example the Tactical Problem Solving (Planning) Process (TPSP).

This study should be forecasted to make contact prior to any key training exercise. The intervention milestones (e.g., Warrior Strike (A), Warrior Strike (B) and JRTC/NTC) are great times to assess real-time Brigade staff decision making and staff interaction. These evaluation times allow the Investigator team to observe the BCT staff as they work through daily challenges and respond to BCT Commanders guidance.

Other data: For this study to be successful it will be necessary to gather unit data For example, unit status report (USR) and unit additional skill identifiers (ASI) information would be necessary. Also, an unobtrusive Staff BIO survey may be used for preliminary information gathering and to provide an early input of staff ASI.

Cognitive measures development

It should been noted, that at this time the Investigator team has been notified that there will be no studies or surveys implemented that will deter the unit from training or focusing on their mission. However, using a properly forecasted timetable that actually sets in motion during the early portion of the reset phase in the ARFORGEN lifecycle, would allow the Investigator team to complete limited to in-depth studies, questionnaires, and surveys without detracting from unit training.

The Investigators' primary mandate is to determine an approach (e.g., tools) to measure and assess how well a SBCT prepares for combat. This investigation could lead to new insights into the development of Army / Military training strategies and methodologies, and offer more effective alternatives for Modular BCT training in support of future ARFORGEN lifecycle training requirements.

Our research will encompass an Observer Assessment form, unobtrusive surveys, and pertinent unit data that will indicate a rate of learning for combat preparation as a SBCT returns from a deployment and progresses through their ARFORGEN lifecycle in preparation for redeployment. The Observer Assessment form will be conducted as per recommendations during the Brigades' reset/retrain phase. The hypothesis for the Observer Assessment should indicate a transformation from an analytical thinking staff to a cognitive thinking ahead team. For example, during SBCT LTP training the Brigade Commander or representative should be giving his staff a very high level of Commander guidance and Commander intent. So theoretically, the Brigade staff should be at a cognitive level at or near the end of NTC/JRTC in which the staff is providing a level of feedback and products to support the Commander's intent to effectively offset additional Commander guidance to meet the mission.

To assess how a unit grows intuitively, it is necessary to understand the ARFORGEN lifecycle and in that training path identify key training events that will provide a scenario in which the Investigator team can monitor the inner workings of the Brigade staff. As previously stated, the MDMP process is a great starting point to assess the staff's decision making processes. The MDMP process is used during formal and deliberate decision making situations. However, the Investigator team determined that the Brigade staff follows an abbreviated MDMP process in which all the steps are met, but in a different format.

The Tactical Problem Solving (Planning) Process (TPSP) (Appendix E) will monitor Staff level targeting process meetings (e.g., Assessment Working Groups, Working Groups, Pre-Targeting, Targeting, Non-Lethal, Lethal, Decision briefings) that can be assessed over time to show how well a staff is progressing from an analytical stage to an intuitive team. As depicted in Figure 4, the TPSP process continues to meet or mirrors the MDMP methodology, but provides additional guidance through the Brigades decision making process.

As a result of Investigator team input, the BCT has modified their decision making process in which multiple working groups or 'think tank' type meetings occur. There are still many similarities to the AFROGREN lifecycle and these meetings produce tangible information that is used through their decision making process.

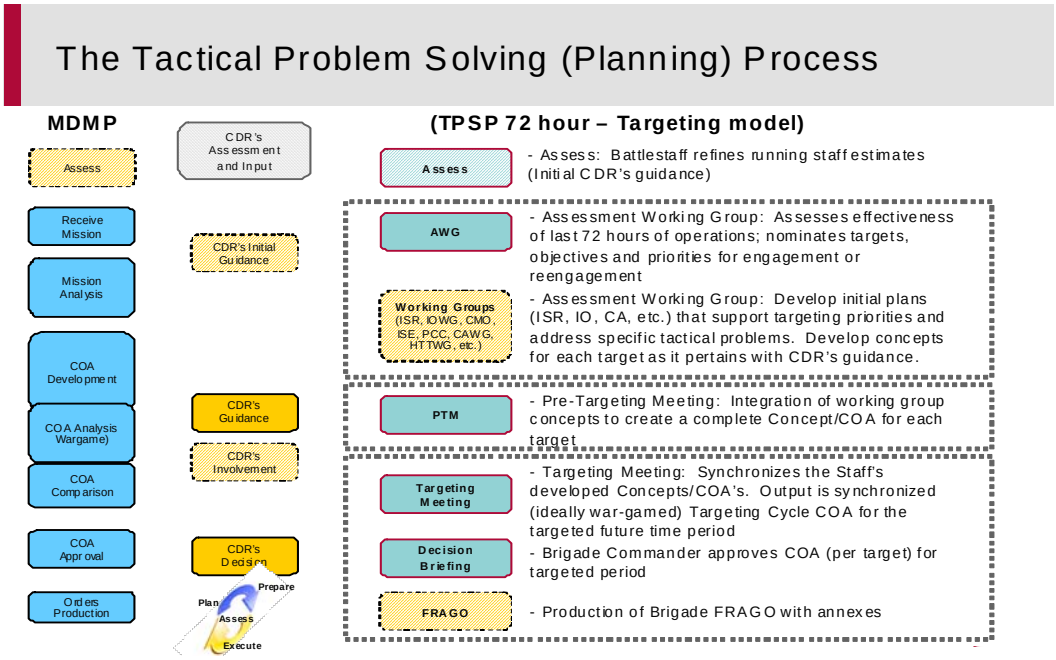


Figure 4: Tactical Problem Solving (Planning) Process

Observer assessment tools

To accomplish the mission and to develop and apply a set of cognitive assessment metrics designed to measure the rate of learning achieved by a Stryker Brigade Combat Team (SBCT) during training, the Investigator team has developed two major Investigator assessment tools:

- Observer Assessment metrics form: This assessment tool follows the TPSP decision-making process using the scaled attributes (from the Special Forces Officers course KSAs).
- The Observer Survey is part of the Observer Assessment form which will provide a review reference to the Brigade exploiting the Army Battle Command Systems (ABCS) (system of systems)
- Staff BIO survey: This assessment tool focuses on combat experience and cognitive related military schools

Observer assessment

These assessments will be conducted by the Investigator team and will be unobtrusive to the unit. The basic "fly on the wall" model will be closely adhered to. However, limited "side-bar" discussions may be pertinent as necessary.

The Observer Assessment form is to provide a command approach to cognitive metrics while observing the Tactical Problem Solving (Planning) Process (TPSP) during Brigade exercises that focus on a version of the Military Decision Making Process (MDMP) (Appendix F, TPSP Observer Assessment form). This assessment will be conducted during normal Brigade exercises and monitor daily operations that will survey staff briefings (i.e., Assessment Working Groups, Working Groups, Pre-Targeting, Targeting, Non-Lethal, Lethal, and Decision briefings). In sum, the assessment will handrail the TPSP process and follow the Brigade staff on their organizational learning and processing rate. The Investigator will provide and overall rating per attribute on how well the Brigade develop, apply, and employ information on an analytical versus intuitive scale.

Conduct assessments of a designated BCT

The Investigator team will conduct assessments by using the assessment tools at agreed upon intervention points to collect data and continue to validate the assessment tools.

As explained earlier, the designated SBCT at Fort Lewis, WA was unavailable for this research due to mission requirements. A similar Modular Brigade Combat Team was used for the study. The 4th Infantry Division (ID) is very competitive toward any Stryker Brigade and they have had multiple combat deployments. Additionally, they have similar Army Battle Command Systems (ABCS) and unit structure. By using the 4th ID, 4th Infantry Brigade Combat Team (IBCT) has allowed the Investigator team flexibility to maneuver around the staff and make beneficial changes to the assessment tools and evaluation techniques that have evolved throughout the Brigades ARFORGEN lifecycle.

Data Evaluation and Preparation of Findings

Concept of operations (restated mission statement)

Develop and conduct a pilot project to measure the rate of learning achieved by a Stryker Brigade Combat Team (SBCT) during training in preparation for combat operations through a set of cognitive assessment tools.

Phase 3: Develop insights on assessments and prepare final report

Throughout the contract lifecycle, the Investigator team developed key collection insights to include emails, PowerPoint presentations, In-Progress Reports (IPR), reference materials, and assessment tools for a final report.

BAE analysts will integrate all previous data collection (e.g., assessments, Investigator observations and insights), interpret the results, and provide sequential reports through the Army Research Institute (ARI) to the Commander, I Corps at Fort Lewis, Washington. This report will address the full scope of the stated research questions for this project as well as those added throughout the process.

Project plan overview

As previously discussed, the initial objective for this project was to evaluate a Stryker Brigade Combat Team (SBCT). As circumstances are sometimes challenging, the SBCT was not available.

It should also be noted that additional guidance was given to the Investigator team not to conduct surveys or questionnaires that would deter from unit training.

Our research will encompass observer assessments, unobtrusive surveys, and pertinent unit data that will indicate a rate of learning for combat preparation as a BCT returns from a deployment and progresses through their ARFORGEN lifecycle. The observer assessments will be conducted as per recommendations during the Brigades' reset/retrain phase. The hypothesis for the observer assessments should indicate a transformation from an analytical thinking staff to a cognitive thinking ahead team. For example, during SBCT LTP training the Brigade Commander or representative should be giving his staff a very high level of Commander guidance and Commander intent. So theoretically, the Brigade staff should be at a cognitive level at or near the end of NTC/JRTC in which the staff is providing a level of feedback and products to support the Commander's intent to effectively offset additional Commander guidance to meet the mission.

BAE is prepared to move forward to evaluate additional Brigades and provide additional reports that will address the applicability of adopting Stryker University's collaborative, distributive, and continuous learning methodology as a way for the U.S. Army to prepare its Modular Brigade Combat Teams (MBCTs) for combat.

Assessment approach

As discussed, the ARFORGEN lifecycle has become a phased process with dependable timelines and training milestones for the Modular BCT. It is important to note that a successful study is paramount on rapport and a dependable line of communications with the Brigade or study unit. It is essential to identify key assessment intervention points throughout the Brigades' ARFORGEN lifecycle and conduct the assessments at those milestones.

To allow for a solid study, initial contact should be made early in the reset phase. During the reset phase, the unit has some limited time to brief and talk to the Investigator team for limited surveys, studies and requests for unit database information. The unit databases would provide for the additional skills identifier (ASI) information for the study. When the unit begins Pre-Eval phase, starting with example Warrior Strike (A), from here on the Brigade Commander and his staff are 100% focused on deployment operations and not interacting with "studies." However, with the proper assessment tools, a properly trained Investigator team will have the ability to mirror a Brigade through their ARFORGEN lifecycle and collect meaningful data on their cognitive learning processes.

As the Investigator team processed their data for this project, they were able to watch and document a Brigade staff as they were molded into a formidable team that would excel in any future endeavors. Even though this study was to assess a SBCT in the 4 IBCT, 4 ID opened its Tactical Operations Command (TOC) and afforded the Investigator team latitude to successfully accomplish their mission.

Final comments

This research note provided assessment tools, a questionnaire, and a survey that were used to develop a cognitive behavioral study on a United States Army Modular Brigade. It also described the techniques and processes to which further studies may be implemented. While the materials developed in this study was developed specifically for the IBCT, the concepts and approaches provide a methodology that can be used for other Modular Brigades or similar military units. It may be noted, that the methodology for this study was intentionally tailored so other military organizations may adapt and adopt similar studies as a means toto measure their units.

It needs to be stressed that the ARFORGEN lifecycle is a living, breathing schedule of events that has evolved over several years to be a process of phases and exercises that produces a group of Soldiers into an intuitive force that embraces challenges and enjoys the successes that they will yield.

> Suggestions for future research include planning and forecasting a Modular Brigade with ample time to conduct a study of this magnitude. Units cannot and will not wait to be assessed. Additionally, there should be open lines of communication with ARI, the study unit(s) and contractors to ensure all research requirements are being met. A timeline would also be beneficial in case planning methodologies change, and further, would allow for the investigating team to attend training events in the units' ARFORGEN lifecycle and training calendar.

Appendix A: Leader Initiative Metric

Leader Initiative BARS

1: Understand Higher's Intent

1 (Novice)	**2** (Advanced Beginner)	**3** (Competent)	**4** (Proficient)	**5** (Expert)
Literally interprets orders/direction from higher echelons	Able to interpret orders/direction from higher echelons but not able to understand nuances of order/direction	Able to interpret orders/direction from higher echelons but does not attempt to understand nuances of order/direction	Able to interpret orders/direction from higher echelons, understanding of intent rather than letter of instruction takes considerable study and discussion	Rapidly understands and incorporates orders/direction from higher echelons given minimal direction.
1	2	3	4	5

2: Trust Superiors and Subordinates

1 (Novice)	**2** (Advanced Beginner)	**3** (Competent)	**4** (Proficient)	**5** (Expert)
Does not accept that higher has given adequate or complete guidance, does not trust subordinates without explicit instruction.	Accepts guidance from higher as complete but does not accept its adequacy and is unwilling to "fill in the holes"	Accepts guidance from higher authorities but does not trust subordinates.	Inherently accepts higher's stated and unstated goals and objectives but does not trust subordinates to do the same	Inherently accepts higher's stated and unstated goals and objectives and trusts subordinates to do the same
	Willing to give subordinates some leeway, but requests frequent updates/check-ins	Trusts subordinates with minimal direction but does not fully accept guidance from higher.	Accepts higher's stated but not unstated goals and objectives; inherently trusts subordinates	
1	2	3	4	5

3: Act Collaboratively and Decisively

1 (Novice)	**2** (Advanced Beginner)	**3** (Competent)	**4** (Proficient)	**5** (Expert)
Does not welcome nor accept input from subordinates	Accepts but rarely incorporates inputs from subordinates	Welcomes but has problems incorporating inputs from subordinates	Welcomes inputs but gets overly bogged down in discussions/debates	Welcomes input and challenges subordinates to inject their thoughts but does not get bogged down in discussions.
1	2	3	4	5

4: Exploit opportunities (opportunistic)

1 (Novice)	**2** (Advanced Beginner)	**3** (Competent)	**4** (Proficient)	**5** (Expert)
Changes in situation not assessed against objectives	Identifies opportunities but is not able to take advantage due to slow response	Identifies opportunities but is slow to adapt plans to take advantage.	Identifies opportunities and is able to exploit most of them	Situational changes rapidly assessed and plans are adjusted to accommodate.
1	2	3	4	5

5: Objective-focused vs risk averse

1 (Novice)	**2** (Advanced Beginner)	**3** (Competent)	**4** (Proficient)	**5** (Expert)
Unwilling to trust instincts, react outside of doctrine due to fear of failure	Unwilling to take risks due to strict adherence to earlier plans	Willing to take risks with explicit approval from higher	Willing to take calculated risks after extensive discussion with available advisors	Willing to take calculated risks without approval (trusts instincts)
1	2	3	4	5

6: Uses systems to assist not to make decisions

1 (Novice)	**2** (Advanced	**3** (Competent)	**4** (Proficient)	**5** (Expert)

	Beginner)			
Relies heavily on information systems/policy to drive methods.	Relies on information systems/policy but is willing to question them when they clearly conflict with the situation at hand	Minimal use of systems/policy to drive planning and adaptation	Uses systems and policies as inputs on methods and process but still does not fully trust instincts/training	Systems used to provide input on methods and process, but are only a supporting element.
		Leans towards system/policy vice experience and intuition to drive planning and adaptation		
1	2	3	4	5

7: Integrates input from a variety of sources

1 (Novice)	**2** (Advanced Beginner)	**3** (Competent)	**4** (Proficient)	**5** (Expert)
Unable to incorporate additional information.	Incorporates some additional information, but tends to discard information that does not fit with current plans/understanding.	Incorporates additional information, but tends to overly favor certain systems/sources without apparent reasoning other than comfort/familiarity	Incorporates information from a variety of sources but is slow to adapt to it	Actively seeks information from a variety of sources and seamlessly incorporates into decision making process.
1	2	3	4	5

Appendix B: Command Approach Metric

Observer Assessment

Command Approach: Metrics for Cognitive Decision Making

OBSERVER TASK: _____ **Assessment**
Date: ___ Nov 08 **Start:**
Finish: **Analytical vs. Intuitive Decision-Making**

Image of Unit's Patch

Measure **I**BCT cognitive effectiveness and performance per attribute:
"1" Analytical and "5" Intuitive - Circle appropriate number

Attributes	Analytical				Intuitive	Comments
General Staff Efficiency	1	2	(3)	4	5	
Staff Resiliency	1	2	(3)	4	5	
Staff Openness	1	2	(3)	4	5	
General Cognitive Ability	1	2	(3)	4	5	
Problem Solving / Decision Making Skills	1	2	(3)	4	5	
Staff Awareness	1	2	(3)	4	5	
TBD	1	2	3	4	5	
TBD	1	2	3	4	5	
TBD	1	2	3	4	5	

Observer Survey

IBCT use of ABCS (System of Systems) for MDMP - "1" Disagree and "5" Agree - Circle	Disagree				Agree	Comments
- Does the **I**BCT access the information from the ABCS?	1	2	3	4	5	
- Does the **I**BCT add to the information available from the ABCS?	1	2	3	4	5	
- Does the **I**BCT employ the information from the ABCS into their decision-making?	1	2	3	4	5	

Observer Notes

Demonstrating Analytical vs. Intuitive Decision - Making (Guidance Sheet) page 1

Attributes / Definitions	Analytical	Somewhat Analytical	Mixed	Somewhat Intuitive	Intuitive
General Staff Efficiency	Staff does not have the confidence in their ability to verbally or visually display their product and does not know how to effectively analyze the options or their implications	Occasionally demonstrates confidence in their ability to verbally and visually display their product, but does not necessarily know how to analyze the options	Recognizes when to demonstrate confidence in their ability to verbally and visually display their product, but only makes surface-level analytical updates and changes	Recognizes and reacts with appropriate confidence in their ability to verbally and visually display their product while analyzing options and their implications	Automatically recognizes and reacts with confidence in their ability to verbally and visually display their product while appropriately analyzing options and their implications
Staff Resiliency	Staff does not have the ability to recover quickly from change or misfortune during a scenario and does not remain composed without Commanders guidance	Occasionally recognizes how to recover quickly from a change or misfortune, but does not make the adjustments when faced with a circumstance that requires limited Commanders guidance	Staff recognizes when to recover from a change or misfortune but makes limited adjustments when faced with a stressful circumstance that balances with the Commanders intent	Staff recovers and remains composed during a misfortune and makes adjustments when faced with a stressful circumstance that facilitates the Commanders intent	Automatically recognizes and remains composed during a misfortune and makes productive adjustments when faced with a stressful circumstance without sacrificing Commanders intent
Staff Openness	Staff is not able to plan or process information related to new events or adapt planning to changing environment. Staff does not provide inovative ideas without deliborate guidance	Staff does not intentionally solicit information on adapting plans to situations, will listen to submitted ideas but does not implement	Generally solicits information on adapting plans and ideas but is slow to implement innovative ideas for implantation	Actively solicits information and is willing to change plans based on changing situations. Staff acts as more of a facilitator than leader of innovative ideas	Plans change without much deliberation as staff works as a team and is able to understand the dynamics and needs of changing situations. Staff leads with innovative ideas

Additional Comments

Analytical: Is not able to process information related to the **attribute**

Somewhat Analytical: Does not actively solicit information, but will listen

Mixed: Solicits information on adaption, but is slow to implement

Somewhat Intuitive: Actively solicits and is willing to change plans

Intuitive: Plans change without much deliberation as staff works as a team - discussions are fluid

Appendix C: Leadership Intent Metric

User's Guide for
Commander's Intent
Tactical Thinking Behaviorally Anchored Rating Scales
T-BARS

I. Overview

The Commander's Intent Tactical Thinking Behaviorally Anchored Rating Scales (T-BARS) is designed to measure an individual's cognitive proficiency in interpreting and applying a higher commander's intent and the individual's ability to adequately convey his/her own commander's intent to subordinates.

FM 3-0 (27 February 2008), the Army's doctrinal proponent for tactical definitions, defines commander's intent as follows:

> *The Commander's Intent is a clear, concise statement of what the force must do and the conditions the force must establish with respect to the enemy, terrain, and civilian considerations that represent the desired end state.*
>
> FM 3-0 (27 February 2008)

The commander's intent succinctly describes what constitutes success in an operation. It includes the operation's purpose and the conditions that define the end state. It links the mission, concept of operations, and tasks to subordinate units. A clear commander's intent facilitates a shared understanding and focus on the overall conditions that represent mission accomplishment. During execution, the commander's intent spurs individual initiative.

Commanders develop their intent statement personally (FM 3-0, p.5-10). Commander's intent, coupled with mission, directs subordinates toward mission accomplishment, especially when current orders no longer fit the situation and subordinates must decide how to deviate from them. Subordinates use the commander's intent to orient their efforts and help make decisions when facing unforeseen opportunities or threats.

The initial commander's intent statement focuses the staff during the operations process. The staff uses this statement to develop and refine courses of action that contribute to establishing conditions that define the end state. Planning involves developing lines of effort that link the execution of tactical tasks to end state conditions. A clear intent statement is essential to this effort.

II. Commander's Intent T-BARS

Table 1
Theme 1: Keep a Focus on the Mission and Higher Intent

Combat leaders must never lose sight of the purpose and results they are directed to achieve – even when unusual and critical events may draw them in a different direction.

Focus on the Mission and Higher Intent

1 (Novice)	**2** (Advanced Beginner)	**3** (Competent)	**4** (Proficient)	**5** (Expert)
(A) Asks questions about facts of scenario description.	(A) Makes a statement about the situation (planning and execution) in terms of mission analysis without "intent" as a "lens".	(A) Analyzes intent statement in order to determine what has to be accomplished.	(A) Articulates rationale for sequencing tasks based on situational factors.	(A) States concept of operations rapidly after receipt of mission, citing variable of situation and/or intent.
1	2	3	4	5
(B) Asks questions about facts of stated mission tasks.	(B) Exhibits uncertainty about priorities in the mission or does not prioritize.	(B) Debates whether mission will support intent.	(B) Describes how own mission will contribute to larger operation/mission.	(B) Articulates how and/or why course of action or concept of operations supports higher intent.
(C) Articulates understanding of mission without regard to intent.	(C) Expresses uncertainty about what constitutes mission success.	(C) Identifies consequences of failing to complete mission in terms of effect on intent/higher operations. (Big Picture)	(C) Discusses during execution whether actions are supporting intent.	(C) Identifies changes or relevant new information in situation and articulates adjustments to course of action during execution.
(D) Asks for	(D) States what	(D) Identifies	(D) Prioritizes	(D) Allocates assets

clarification of rules of engagement (ROE).	needs to be accomplished (mission task) but not how to do it.	the need to prioritize mission tasks or subtasks.	actions in order to support higher intent or larger operations (e.g., “I need to do ‘this’ instead of ‘that.’”)	during planning or execution based on a prediction about the enemy.
(E) Uses “templated” methods for analyzing/planning.	(E) Identifies timing as a consideration in mission tasks. (Timing)	(E) Differentiates priorities in mission tasks.	(E) Predicts how future events can impact own mission and generates contingencies to overcome interference.	(E) Proactively places assets to support larger intent.
(F) Uses only organic assets for mission.	(F) Identifies information requirements that can impact mission (e.g., what are dangers ahead on route).	(F) Articulates what would be a favorable outcome for a particular task.	(F) Articulates during execution changes that will interfere with achieving intent.	(F) Responds to change fluidly by implementing planned contingency or rapidly articulating new contingency.
1	2	3	4	5
(G) Adheres rigidly to stated tasks of mission.	(G) Keeps higher HQ informed about plans and situation during execution.	(G) Describes future events that may impact or interfere with current mission.	(G) Describes potential impact of non-combatant activity on mission during execution.	(G) Eliminates obstacle to higher intent.
(H) Asks about facts of events during execution.	(H) Relies on higher HQ to make decisions.	(H) Articulates what task will happen next.	(H) Describes how situation could draw unit away from mission accomplishment	(H) Creates advantage for higher or adjacent unit. (Big Picture)

(I) Communicates only within unit about plans and situation.	(I) Relies on staff to identify potential branch and sequel plans.	(I) Articulates in a general manner what the effect(s) of task/mission accomplishment will be beyond intended effect.	(I) Requests additional support from higher when mission accomplishment requires it.	(I) Presents opportunities to higher or adjacent units. (Big Picture)
(J) Asks questions about scenario facts or events during execution.	(J) Gives general guidance to staff regarding intent.	(J) States a consideration of actions other than stated mission (implied tasks or additional tasks to meet intent).	(J) Articulates consideration of two or more of the following together: Mission; own tasks; higher intent; desired end state; what constitutes success	(J) Articulates specific second and third order effects of an action during execution.
(K) Questions own decision making authority.	(K) Does not question own staff's rationale for or appraisal of implied tasks.	(K) Seeks clarification of implied tasks.	(K) Alters or refines course of action in light of changes in situation.	(K) Articulates actions necessary to ensure mission accomplishment when faced with threat to mission success during execution.
1	2	3	4	5
(L) Cannot visualize potential contingencies to be prepared for.	(L) Relies on staff to identify potential contingencies.	(L) Seeks clarification on potential "be prepared" missions.	(L) Infers priorities from intent statement.	(L) Articulates actions necessary to ensure intent when stated mission is superseded by dynamic events, but intent is still achievable.
(M) Adheres rigidly to stated tasks of mission despite changes in	(M) Reverts to higher HQ before making changes based on unforeseen developments	(M) Adheres to plan (tasks and manner of accomplishment) in the face of new and	(M) Alters or refines course of action based on discovery of new leverage points in	(M) Responds to change fluidly by implementing planned contingency or rapidly articulating new contingency.

the situation		changing information.	situation.	
(N) Does not identify mission critical tasks to ensure mission accomplishment	(N) Relies on staff to determine mission critical tasks.	(N) Identifies important aspects of mission that require attention for success. (Visualization)	(N) Articulates how events will be sequenced.	(N) Articulates actions necessary to ensure intent when stated mission is
(O) Does not recognize the importance of timing and/or sequencing for the particular mission. (Timing)	(O) States general sequencing of tasks.	(O) Articulates timing estimates or sequencing as a critical component of the planning process. (Timing)	(O) Articulates how timing or sequencing of events needs to allow for re-planning or contingencies.	(O) Articulates actions necessary to ensure mission accomplishment when faced with threat to mission success during execution.

Table 9

Theme 2: Convey Commander's Intent

Combat leaders must clearly and concisely articulate what the force must do and the conditions the force must establish with respect to the enemy, terrain, and civil considerations that represent the desired end state

Convey Commander's Intent

1	2	3	4	5
(AA) Asks questions about facts of higher commander's intent	(AA) Makes a statement about the situation in terms of mission analysis without giving own intent	(AA) Analyzes and debates higher intent statement in order to determine what has to be accomplished.	(AA) Articulates rationale for sequencing tasks based on situational factors.	(AA) States concept of own commander's intent rapidly after receipt of mission, citing variable of situation
(BB) Asks questions about facts of own commander's intent.	(BB) Exhibits uncertainty about priorities own intent or does not prioritize.	(BB) Debates whether own intent will support mission.	(BB) Describes how own intent will contribute to overall mission accomplishment	(BB) Articulates how and/or why own intent supports both mission and higher intent.
(CC) Conveys understanding of mission without regard to own intent	(CC) Expresses uncertainty about what constitutes mission success.	(CC) Expresses consequences of failing to complete mission in terms of effect on higher intent.	(CC) Discusses during execution whether actions are supporting intent.	(CC) Identifies changes or relevant new information in situation and articulates adjustments to intent during execution.
(DD) Seeks (via staff) clarification of higher intent.	(DD) Conveys what must be accomplished (higher intent) but not how to do it.	(DD) Conveys the need to prioritize mission critical tasks or subtasks.	(DD) Prioritizes actions in order to support higher intent or larger operations (e.g., "I need to do 'this').	(DD) Allocates assets during planning based on a prediction about the enemy.

1	2	3	4	5
(EE) Uses "templated" methods for developing own intent.	(EE) Conveys importance of timing as a consideration in mission tasks.	(EE) Differentiates and conveys priorities in mission tasks.	(EE) Conveys how future events will impact own mission and generates contingencies to overcome them.	(EE) Conveys importance of proactively placing assets to support larger intent.
(FF) Describes use of only organic assets for mission.	(FF) Conveys information requirements that can impact mission (e.g., what are dangers ahead on route).	(FF) Articulates what would be a favorable outcome for a particular task.	(FF) Articulates during execution changes that will interfere with achieving intent.	(FF) Responds to change fluidly by rapidly articulating new contingency.
(GG) Adheres rigidly to stated intent.	(GG) Informs higher HQ about own intent and situation during execution.	(GG) Describes future events that may impact or interfere with current mission.	(GG) Describes potential impact of non-combatant activity on own intent during execution.	(GG) Stresses use of individual initiative to eliminate obstacles to achieving his/her intent.
(HH) Asks about facts of events during execution	(HH) Relies on higher HQ to make decisions	(HH) Articulates what task will happen next.	(HH) Describes how situation might draw unit away from mission accomplishment	(HH) Describes advantages for higher or adjacent unit.
(II) Discusses only within unit about plans and situation.	(II) Relies on staff to identify potential branch and sequel plans.	(II) Generally articulates what the effect(s) of task/mission accomplishment will be beyond intended effect.	(II) Conveys need for additional support from higher when mission accomplishment requires it.	(II) Articulates opportunities that should be reported to higher or adjacent units.

(JJ) Asks questions about scenario facts or events during execution.	(JJ) Conveys general guidance to staff regarding intent.	(JJ) States a consideration of actions other than stated mission to meet intent: terrain, enemy, civilian populace.	(JJ) Articulates consideration of two or more of the following together: Mission; own tasks; higher intent; desired end state; what constitutes success	(JJ) Articulates and conveys specific second and third order effects of an action during execution.
(KK) Questions own decision making authority.	(KK) Does not question own staff's appraisal of implied tasks.	(KK) Seeks clarification of implied tasks	(KK) Alters or refines course of action in light of changes in situation.	(KK) Articulates actions needed to ensure mission accomplishment when faced with threat to mission success during execution.
(LL) Does not identify potential contingencies to on be prepared for.	(LL) Directs staff to identify potential contingencies.	(LL) Seeks clarification on potential "be prepared" missions.	(LL) Infers and articulates priorities from intent statement.	(LL) Articulates actions necessary to ensure intent when stated mission is superseded by dynamic events
(MM) Written commander's intent statement prepared by staff.	(MM) Written commander's intent statement prepared by staff with commander's guidance.	(MM) Written commander's intent statement personally prepared by the commander.	(MM) Written and concise commander's intent statement personally prepared by the commander – three to five sentences long.	(MM) Written commander's intent statement personally prepared by the commander is easy to remember and clearly understood two echelons down.

1	2	3	4	5
(NN) Intent statement merely summarizes the concept of operations. (Purpose)	(NN) Intent statement conveys uncertainty about what constitutes success. (Purpose)	(NN) Intent statement facilitates a shared understanding and focuses on the overall conditions that represent mission accomplishment. (Purpose)	(NN) Intent statement clearly articulates the link between the mission and the concept of operation. (Purpose)	(NN) Intent statement provides a clear and concise expression of purpose of the operation and what role the unit has in accomplishing tactical or operational objectives. (Purpose)
(OO) Does not address enemy commander's intent. (Enemy)	(OO) Relies on staff to develop assessment of enemy commander's intent. (Enemy)	(OO) Intent verbally provided to staff with the restated mission and planning guidance, and is refined as commander considers staff estimates. (Enemy)	(OO) Intent articulates where the commander will accept risk. (Enemy)	(OO) Intent articulates commander's assessment of the enemy commander's intent. (Enemy)
(PP) Intent statement uses "templated" methods for analyzing/planning. (End State)	(PP) Intent states what needs to be accomplished but not the desired end state. (End State)	(PP) Intent statement describes the operational purpose and conditions that define the desired end state. (End State)	(PP) Intent statement facilitates a shared understanding and focuses on the overall conditions that represent mission accomplishment. (End State)	(PP) Commander's intent succinctly describes his/her visualization (in doctrinal terms) of the entire operation in a clear statement of what he/she wants to accomplish. (End State)
1	2	3	4	5

(QQ) Intent statement fails to address transition to future operations. (Visualize)	(QQ) Intent statement provides general reference to future operations. (Visualize)	(QQ) Intent statement describes conditions necessary to support future operations. (Visualize)	(QQ) Intent statement links the mission, concept of operations and tasks to subordinate units. (Visualize)	(QQ) Intent statement articulates how the posture of the units at that end state facilitates transition to future operations. (Visualize)
(RR) Intent statement is not developed enough to facilitate individual initiative.	(RR) Intent statement relies on higher HQ to make decisions	(RR) Intent statement adequately describes what task will happen next.	(RR) Intent statement describes how situation might draw unit away from mission accomplishment	(RR) Intent statement spurs individual initiative.

Appendix D: Guidance sheet MDMP plan (1 of 2)

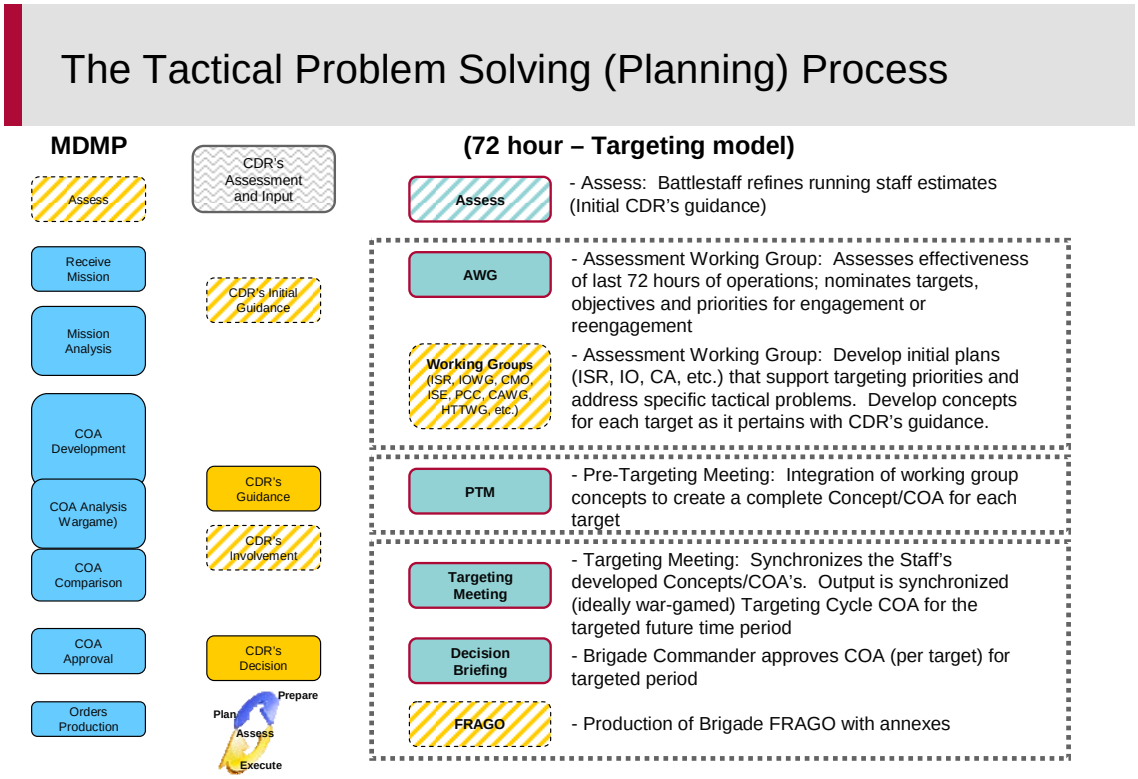
	Demonstrating Analytical vs. Intuitive Decision - Making (Guidance Sheet)				
Attributes / Definitions	**Analytical**	**Somewhat Analytical**	**Mixed**	**Somewhat Intuitive**	**Intuitive**
Handle crisis situations	Does not recognize when to react to a crisis situation and does not know how to analyze the options or their implications	Occasionally recognizes when to react to a crisis situations, but does not necessarily know how to analyze the options	Recognizes when to react to a crisis situations, but only makes surface-level options for dealing with crises and their implications	Recognizes and reacts appropriately in crisis situations, analyzing options for dealing with crises and their implications	Automatically recognizes and reacts appropriately in crisis situations, quickly analyzing options for dealing with crises and their implications
Handle work stress	Does not recognize when to remain composed and does not necessarily make the adjustments when faced with stressful circumstances	Occasionally recognizes when to remain composed but does not necessarily make the adjustments when faced with stressful circumstances	Recognizes when to remain composed but does not make the adjustments when faced with stressful circumstances to the highly demanding workload / schedule	Recognizes and remains composed when faced with stressful circumstances or a highly demanding workload / schedule	Automatically recognizes and remains composed when faced with stressful circumstances or a highly demanding workload / schedule
Solve problems creatively	Does not formulate a plan that compiles with the intent to integrate and employ unique analyses, and does not fully generate new, innovative ideas in complex areas	Does not intentionally formulate a plan to meet the intent to integrate and employ unique analyses, and does not generate new, innovative ideas in complex areas	Generally formulates a plan that meets the intent to integrate and employ unique analyses, and recognizes when to generate new, innovative ideas in complex areas	Formulates a plan to integrate and employ unique analyses, and generate new, innovative ideas in complex areas	Rapidly formulates a plan to integrate and employ unique analyses, and generating new, innovative ideas in complex areas
Deal w/ unpredictable /changing situations	Does not recognize when to adjust plans, goals, actions, or priorities to deal with changing situations to get even the intent of the job done	Does not intentionally recognize or adjust plans, goals, actions, or priorities to deal with changing situations to get the job done	Recognizes but does not effectively adjust plans, goals, actions, or priorities to deal with changing situations, and doing whatever it necessary to get the job done	Recognizes and effectively adjust plans, goals, actions, or priorities to deal with changing situations, and doing whatever it necessary to get the job done	Automatically recognizes and effectively adjusts plans, goals, actions, or priorities to deal with changing situations, and doing whatever it necessary to get the job done
Additional Comments					

Guidance sheet MDMP plan (2 of 2)

	Demonstrating Analytical vs. Intuitive Decision - Making (Guidance Sheet)				
Attributes / Definitions	**Analytical**	**Somewhat Analytical**	**Mixed**	**Somewhat Intuitive**	**Intuitive**
Adapt tasks, tech, and procedures (TTP)	Does not recognize when to anticipate changes in work demands and does not formulate a proficiency to learn new tasks and/or methods to inquire about obtaining training for unfamiliar tasks, methods, or adjusts to new tasks, techniques and procedures (TTP	Does not intentionally recognize when to anticipate changes in work demands and does not intentionally formulate a proficiency to learn new tasks and/or methods to inquire about obtaining training for unfamiliar tasks, methods, or adjusts to new TTP's	Recognizes but does not know when to anticipate changes in work demands and does not formulate a proficiency on learning new tasks and/or methods to inquire about obtaining training for unfamiliar tasks, methods, and/or adjusts to new TTP's	Recognizes when to anticipate changes in work demands and formulates proficiently learning new tasks and/or methods to inquire about obtaining training for unfamiliar tasks, methods, and adjusts to new tasks, techniques and procedures (TTP)	Automatically recognizes when to anticipate changes in work demands and rapidly formulates proficiently learning new tasks and/or methods to inquire about obtaining training for unfamiliar tasks, methods, and adjusts to new tasks, techniques and procedure
Demonstrate interpersonal adaptability	Does not recognize how to demonstrate the ability to be open minded and does not know how to make effective relationships with diverse individuals	Does not intentionally recognize when to demonstrate the ability to be open minded and does not know when to make effective relationships with diverse individuals	Recognizes but does not know when to demonstrate the ability to be open minded and does not make effective relationships with diverse individuals	Recognizes when to demonstrate the ability to be open minded and make effective relationships with diverse individuals	Automatically demonstrates the ability to be open minded and develop effective relationships with diverse individuals
Demonstrate cultural adaptability	Does not recognize how to take action to demonstrate an understanding for the implications to adjust ones behavior or appearance as necessary to comply with or show respect for others' values and customs	Does not intentionally take action to demonstrate an understanding for the implications to adjust ones behavior or appearance as necessary to comply with or show respect for others' values and customs	Takes action but does not know when to demonstrate an understanding for the implications to adjust ones behavior or appearance as necessary to comply with or show respect for others' values and customs	Takes action to demonstrate an understanding and implications to adjust ones behavior or appearance as necessary to comply with or show respect for others' values and customs	Automatically takes action to demonstrate an understanding and implications to adjust ones behavior or appearance as necessary to comply with or show respect for others' values and customs
Additional Comments					

MDMP verses TPSP Appendix E: Tactical Problem Solving (Planning) Process (TPSP)

1. Planning Process



2. TPSP Observer Assessment Tool (example)

TPSP - STEP I: BATTLESTAFF ASSESSMENT

Observer Assessment

Command Approach: Cognitive Metrics for TPSP with the SBCT

Observer TASK: Conduct Step I, Tactical Problem Solving (Planning) Process (TPSP) Assessment
Date: **Start:**
Finish:

Analytical vs. Intuitive Decision-Making

Sub Tasks:	Measure SBCT cognitive effectiveness and performance per attribute: "1" Analytical and "5" Intuitive - Circle appropriate number						
Battlestaff refines running staff estimates and procedures	**Attributes**	Analytical				Intuitive	Comments
	General Staff Efficiency	1	2	3	4	5	
	Staff Resiliency	1	2	3	4	5	
	Staff Openness	1	2	3	4	5	
	General Cognitive Ability	1	2	3	4	5	
	Problem Solving / Decision Making Skills	1	2	3	4	5	
	Staff Awareness	1	2	3	4	5	
CDR's Assessment	Adapt tasks, tech, and procedures (TTP)	1	2	3	4	5	
Final Product: CDR's Campaign Plan meeting CDR issues initial guidance	TBD	1	2	3	4	5	
	TBD	1	2	3	4	5	

Observer Survey

BCT use of ABCS (System of Systems) for TPSP - "1" Disagree and "5" Agree - Circle	Disagree				Agree	Comments
- Does the BCT access the information from the ABCS?	1	2	3	4	5	
- Does the BCT add to the information available from the ABCS?	1	2	3	4	5	
- Does the BCT employ the information from the ABCS into their decision-making?	1	2	3	4	5	

Observer Notes

Appendix F: Guidance sheet TPSP attribute plan (1 of 2)

1. TPSP attribute (page 1)

Demonstrating Analytical vs. Intuitive Decision - Making (Guidance Sheet) page 1

Attributes / Definitions	Analytical	Somewhat Analytical	Mixed	Somewhat Intuitive	Intuitive
General Staff Efficiency	Staff does not have the confidence in their ability to verbally or visually display their product and does not know how to effectively analyze the options or their implications	Occasionally demonstrates confidence in their ability to verbally and visually display their product, but does not necessarily know how to analyze the options	Recognizes when to demonstrate confidence in their ability to verbally and visually display their product, but only makes surface-level analytical updates and changes	Recognizes and reacts with appropriate confidence in their ability to verbally and visually display their product while analyzing options and their implications	Automatically recognizes and reacts with confidence in their ability to verbally and visually display their product while appropriately analyzing options and their implications
Staff Resiliency	Staff does not have the ability to recover quickly from change or misfortune during a scenario and does not remain composed without Commanders guidance	Occasionally recognizes how to recover quickly from a change or misfortune, but does not make the adjustments when faced with a circumstance that requires limited Commanders guidance	Staff recognizes when to recover from a change or misfortune but makes limited adjustments when faced with a stressful circumstance that balances with the Commanders intent	Staff recovers and remains composed during a misfortune and makes adjustments when faced with a stressful circumstance that facilitates the Commanders intent	Automatically recognizes and remains composed during a misfortune and makes productive adjustments when faced with a stressful circumstance without sacrificing Commanders intent
Staff Openness	Staff is not able to plan or process information related to new events or adapt planning to changing environment. Staff does not provide innovative ideas without deliberate guidance	Staff does not intentionally solicit information on adapting plans to situations, will listen to submitted ideas but does not implement	Generally solicits information on adapting plans and ideas but is slow to implement innovative ideas for implantation	Actively solicits information and is willing to change plans based on changing situations. Staff acts as more of a facilitator than leader of innovative ideas	Plans change without much deliberation as staff works as a team and is able to understand the dynamics and needs of changing situations. Staff leads with innovative ideas

Additional Comments

Analytical: Is not able to process information related to the **attribute**

Somewhat Analytical: Does not actively solicit information, but will listen

Mixed: Solicits information on adaption, but is slow to implement

Somewhat Intuitive: Actively solicits and is willing to change plans

Intuitive: Plans change without much deliberation as staff works as a team - discussions are fluid

Appendix F: Guidance sheet TPSP attribute plan (2 of 2)

2. TPSP attribute (page 2)

Demonstrating Analytical vs. Intuitive Decision - Making (Guidance Sheet) page 2

Attributes / Definitions	Analytical	Somewhat Analytical	Mixed	Somewhat Intuitive	Intuitive
General Cognitive Ability	Staff does not comprehend intuitiveness, does not predict commanders intent or cannot recognize changing situations	Does not intentionally recognize intuitiveness to predict the commanders intent and does not change to fluid situations	Recognizes but does not effectively administer intuitiveness to predict the commanders intent, but adjusts to changing situations	Recognizes and effectively administers intuitiveness to predict the commanders intent and deals with priorities in changing situations	Automatically recognizes and effectively administers intuitive products to predict the commanders intent and proactively deal with changing situations
Problem Solving / Decision Making Skills	Staff does not recognize or has the comprehension to develop appropriate solutions to difficult problems and does not choose appropriate courses of action (COA)	Does not intentionally recognizes or comprehends when to develop appropriate solutions to difficult problems and does not intentionally select an appropriate COA	Recognizes but does not actively know when to develop appropriate solutions to difficult problems and does not know when to select an appropriate course of action	Recognizes when to anticipate and develop appropriate solutions to difficult problems and formulates a selection process for an appropriate course of action	Automatically recognizes when to anticipate and develops appropriate solutions in advance to difficult problems and predicts an appropriate course of action to difficult situations
Staff Awareness	Staff does not recognize or understands how self and others relate to each other and does not fit into effective staff battlespace	Does not intentionally recognize or understand how self and others relate to each other and does not fit into effective staff battlespace	Recognizes but does not always understand how self and others relate to each other and does not fit into effective staff battlespace	Recognizes when to demonstrate the understanding of how self and others relate to each other and makes effective staff battlespace	Automatically demonstrates the ability to understand how self and others relate to each other and develops effective staff battlespace
Adapt tasks, tech, and procedures (TTP)	Does not recognize when to anticipate changes in work demands and does not formulate a proficiency to learn new tasks, techniques and procedures (TTP)	Does not intentionally recognize when to anticipate changes in work demands and does not intentionally formulate a proficiency to learn and/or adjusts to new TTP's	Recognizes but does not always know when to anticipate changes in work demands and has limited proficiency on learning new methods and/or adjusts to new TTP's	Recognizes when to anticipate changes in work demands and formulates proficiently learning new tasks, techniques and procedures (TTP)	Automatically recognizes when to anticipate changes in work demands and rapidly formulates proficiently learning new tasks, techniques and procedures (TTP)

Additional Comments

Analytical: Commander drives his intent to staff, Commander oversees all aspects of staff management

Somewhat Analytical: Staff will listen to Commander, but staff is timid to implement Commanders intent

Mixed: Staff solicits Commanders intent and staff provides a workable product

Somewhat Intuitive: Staff actively seeks Commanders guidance and provides a higher end product

Intuitive: Staff works as a team, understands the dynamics of the Commanders intent, and requires little to no further guidance from the Commander

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